KALENDO, G. S., Institute of Experimental and Clinical Oncology, Academy of Medical Sciences USSR

"Adaptive Stress Syndrome on the Cellular Level and Its Role in the Cells' Reaction to Irradiation"

Abstract: Experimental data and invividual concepts are synthesized into the theory of adaptive cellular stress syndrome. Ionizing radiation, like most other deleterious agents, stimulates certain cellular mechanisms that function as receptors which are highly sensitive to disturbances in homeostatis as well as very stable control systems which induce immediate, nonspecific, but well coordinated metabolic responses leading to increased resistance. Artificial radioprotective agents generate this adaptive cellular response. After administration of agents which inhibit that response, the injury resulting from ionizing radiation is much more severe.

1/1

USSR   UDC 621.378.325

BOGDANKEVICH, O.V., BORISOV, N.A., KALENDIN, V.V., KOVSH, I.B., KRYUKOVA, I.V.

"Kinetics Of Reproduction Of Luminescent Properties Of GaAs Single Crystals
Irradiated By An Intense Beam Of Electrons"

Kvantovaya elektronika (Quantum Electronics), Moscow, No 5(11),1972,pp 106-111

Abstract: In previous papers by the authors,studies of the principal character-
istics of a GaS laser with pumping by a beam of electrons with an energy up to
1 Mev (i.e., above the threshold for formation of defects) showed that with a
sufficiently prolonged operation of the laser in such a regime, a decrease of
power was observed at approximately 30--50 percent. However, annealing of the
crystals at room temperature over several hours leads to practically a complete
reduction of it. In the present work new results are reported concerning improve-
ment of the radiating power of GaAs after irradiation by intense electrons.
Irradiation of the single crystal was conducted at 300° K with the following
parameters of the electron beam: energy of electrons, 600 kev; current density
in beam, 20--30 a/cm^2; duration of current impulse, 15 nanosec; and recurrence
frequency, 1--2 Hz. Before and after irradiation the spectra were studied of
the photoluminescence of specimens in the 0.75--1.2 micron region at 78° as well
as the change of the laser threshold of generation with excitation by electrons,
1/2

and a 50 kev energy at 300° K. The specimens had the form of a rectangular
parallelepiped: length of resonator 0.5-1 mm, thickness 0.2 mm, width 2—3 mm.
The gallium arsenide was grown by the Czochralski method and doped with tellur-
ium to a concentration of $5 \cdot 10^{17}$ cm^{-3} as well as by the liquid epitaxy method
(without doping) with a concentration of carriers of $1.2 \cdot 10^{15}$ cm^{-3} and a
mobility of 46,000 cm^2/sec at 78° K.(The total concentration of impurity in
these specimens amounted to 10^{16} cm^{-3}.) An increase of photoluminescent inten-
sity and a decrease of the laser threshold was observed in the n-GaAs:Te. These
changes depend on the intensity and dose of irradiation and the parameters of
the initial material. In the non-doped epitaxial specimens an improvement of the
luminescent properties was not observed. A qualitative explanation is given of
the observed effects. The authors thank C.N. Grigor'yev for measurement of the
spectrum of x-ray reflection. 3 fig. 8 ref. Received by editors, 22 Feb 1972.

2/2

USSR

· UDC 621.039.51.001.8

ARNOL'DOV, M. N., BOGATYREV, V. K., DUBOVSKIY, B. G., IVANOVSKIY, M. N.,
KALENICH, V. N., KIR'YANOV, G. I., MILOVIDOVA, A. V., FROLOV, V. V.

"Activation Control of Oxygen in Circulating Sodium-Potassium Coolant Using a Neutron Generator"

Tr. VNII radiats. tekhn. (Works of the All-Union Scientific Research Institute of Radiation Engineering), 1972, No. 7, pp 137-144 (from RZh-50. Yadernyye reaktory, No 11, Nov 72, Abstract No 11.50.93)

Translation: The first stage in carrying out continuous control of oxygen in a circulating loop with an Na-K alloy and a mockup of a nuclear reactor circuit is described. The basis of the method is the familiar reaction for determining oxygen on the basis of N^{16} (the reaction O^{16} (n, p) N^{16}). A small-scale neutron generator of the type NGI-5 with a flux of about $5 \cdot 10^8$ neutron/sec was used for activation.. This method for oxygen control on the basis of the N^{16} isotope is also applicable in the active loop of a nuclear reactor. 4 ill., 2 tables, 2 ref.

1/1

TITLE--PREPARATION OF N,N,DIMETHYLAMINOMETHYLFERROCENE HYDROCHLORIDES AND
  NITRATES -U-

AUTHOR--KALENNIKOV, E.A., VISHNYAKOVA, T.P., KOZLOV, N.S.

COUNTRY OF INFO--USSR

SOURCE--VESTSI AKAD. NAVUK BELARUS. SSR, SER. KHIM. NAVUK 1970, (1), 129

DATE PUBLISHED-------70

SUBJECT AREAS--CHEMISTRY

TOPIC TAGS--IR SPECTRUM, HYDROLYSIS, COPPER CHLORIDE, COBALT CHLORIDE,
  FERROCENE, AMINE DERIVATIVE, NITRATE, ORGANIC SALT

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAME--1987/1074   STEP NO--UR/0419/70/000/001/0129/0129

CIRC ACCESSION NO--AP0104472
                        UNCLASSIFIED

UNCLASSIFIED

CIRC ACCESSION NO--AP0104472   PROCESSING DATE--11SEP70

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. TREATING 5 G
N,N,DIMETHYLAMINOMETHYLFERROCENE (I) IN CH_2Cl_2 WITH 14.1 ML
15PERCENT HCL GAVE FROM THE ORG. LAYER 90-5PERCENT HCL SALT. WHILE
CONCD. HNO_3 DESTROYS I, 15PERCENT HNO_3 FORMED ITS NITRATE IN
90-5PERCENT YIELD. THESE SALTS WERE ALSO FORMED FROM REACTION OF I WITH
AQ. SALTS OF CO AND CU, PROBABLY OWING TO INTERMEDIATE HYDROLYSIS OF CU
OR CO CHLORIDES AND NITRATES, RESP. THE YIELDS WERE 90-5PERCENT. IR
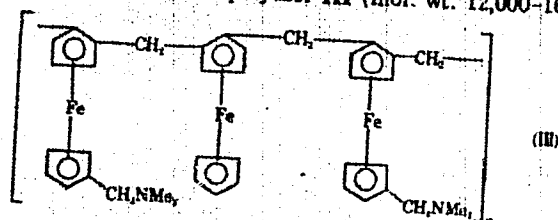SPECTRAL DATA WERE GIVEN.

UNCLASSIFIED

101142q Amination of poly(methylene-1,2-ferrocenylene).
Kalennikov, E. A.; Vishnyakova, T. P. (Inst. Neftekhim. Gazov.
Prom. im. Gubkina, Moscow, USSR). Vysokomol. Soedin., Ser.
B 1970, 12(1), 44-6 (Russ). The title polymer (I) was aminated
with Me$_2$NCH$_2$NMe$_2$ in AcOH, Me$_2$NH.HCl in C$_6$H$_6$, and
Me$_2$NCH$_2$NMe$_2$.2AlCl$_3$ (II) in CH$_2$Cl$_2$. I was best aminated with
II (optimum conditions 40°, reaction time 4 hr, I-II molar ratio
= 1:1) to give aminated polymer III (mol. wt. 12,000-16,000) in

(III)

85% yield having a max. N content of 3.69%.

CKJR

REEL/FRAME
19821146

1/2   021
UNCLASSIFIED
TITLE--ROENTGENOGRAPHIC EVALUATION OF THE HIP JOINTS IN THE NEWBORN AND
INFANTS OF THE FIRST MONTHS OF LIFE -U-
PROCESSING DATE--09OCT70
AUTHOR--KALENOV, V.YE.

COUNTRY OF INFO--USSR

SOURCE--ORTOPEDIYA, TRAVMATOLOGIYA I PROTEZIROVANIYE, 1970, NR 4, PP 40-45

DATE PUBLISHED--------70

SUBJECT AREAS--BIOLOGICAL AND MEDICAL SCIENCES

TOPIC TAGS--ANATOMY, RADIOLOGY, EMBRYOLOGY, DIAGNOSTIC METHODS,
MUSCULOSKELETAL SYSTEM

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAME--1990/0968
STEP NO--UR/9115/70/000/004/0040/0045
CIRC ACCESSION NO--AP0109125
UNCLASSIFIED

UNCLASSIFIED

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE ROENTGENOGRAPHIC AND
ANATOMICAL STUDIES OF THE HIP JOINTS OF FETUSES OF 6-11 MONTHS AND
INFANTS OF THE FIRST 1-3 MONTHS OF LIFE, CONDUCTED PARALLELLY, HAVE
ESTABLISHED THAT IN THE NEWBORN INFANTS THE MEASUREMENT OF THE
ACETABULAR INDEX FAILS TO REFLECT THE TRUE STATE OF THE ACETABULAR ROOF,
AND SHOWS ONLY THE DEGREE OF ITS OSSIFICATION. THEREFORE, IN ORDER TO
DETECT DYSPLASIS AT THIS AGE PERIOD, THE USE OF ONLY THIS ONE INDEX MAY
RESULT IN INCORRECT DIAGNOSIS. IN THE DIAGNOSIS. IN THE DIAGNOSIS OF
DYSPLASIA, BESIDES THE ACETABULAR INDEX, THE AUTHOR RECOMMENDS TO ALSO
RESORT TO THE AID OF INDICES OF STABILITY: ANGLE OF VERTICAL CONFORMITY
AND FACTOR ROOFING. IN THE PRESENT ANALYSIS THE ANGLE OF 53 DEGREES AND
COEFFICIENT OF ROOFING OF 2.6 ARE ESTIMATED AS THE LOWER LIMIT OF NORMAL
MEASUREMENT OF ANGLE OF VERTICAL CONFORMITY. A DESCRIPTION IS PRESENTED
OF THE ROENTGENOGRAPHIC PICTURE OF HIP JOINTS OF THE NEWBORN INFANTS IN
PHYSIOLOGICAL IMMATURITY, DYSPLASIA WITHOUT IMPAIRMENT OF ANATOMICAL
CORRELATIONS, AS WELL AS IN DECENTRATION, SUBLUXATIONS AND DISLOCATIONS.
FACILITY: LENINGRAD DETSKOGO ORTOPEDICHESKOGO INSTITUTA IM. G.
I. TURNERA.

UNCLASSIFIED

USSR

YUSHCHENKOVA, N. I., KALENOV, Yu. A.

"Effect Which the Kinetics of Elementary Processes Have on the Make-up of Combustion Products in Supersonic Expansion"

Moscow, Khimiya i Fizika Nizkotemperaturnoy Plazmy, Moscow University Press, 1971, pp 304-307

Abstract: The authors investigate the influence which the kinetics of chemical reactions has on the composition of the products of combustion of hydrocarbon fuel formed by the components H_2, H, O_2, OH, CO, CO_2, and H_2O (mass fractions of the elements were C--0.25, H--0.10, O--0.65). Ten basic reactions are considered. The problem of determining the composition of the combustion products reduces to solution of equations in gas dynamics and chemical kinetics simultaneously with the equation of state of the reacting gas atmosphere. Two figures, bibliography of three titles.

1/1

1/2   022

UNCLASSIFIED

TITLE--CONDITION OF THE BONE SYSTEM IN PATIENTS WITH DIFFUSE TOXIC GOITER AT PUBERTAL AGE. CLINICAL ROENTGENOLOGICAL STUDY -U-

PROCESSING DATE--20NOV70

AUTHOR-(02)-BUKHMAN, A.I., KALENOVA, N.P.

COUNTRY OF INFO--USSR

SOURCE--PEDIATRIYA 49(1): 29-32. 1970

DATE PUBLISHED------70

SUBJECT AREAS--BIOLOGICAL AND MEDICAL SCIENCES

TOPIC TAGS--RADIOLOGY, BONE, GOITER, ENDOCRINE SYSTEM DISEASE

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAME--3007/0343

STEP NO--UR/0546/70/049/001/0029/0032

CIRC ACCESSION NO--AP0155836

UNCLASSIFIED

UNCLASSIFIED   PROCESSING DATE--20NOV70

CIRC ACCESSION NO--AP0135836
ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. CLINICO ROENTGENOLOGICAL
OBSERVATIONS AND ANALYSIS OF THE CONDITION OF THE BONE SYSTEM IN 35
PATIENTS WITH DIFFUSE TOXIC GOITER AT PUBERTAL AGE WERE MADE. THE BONE
SYSTEM IN PATIENTS WITH DIFFUSE TOXIC GOITER AT PUBERTAL AGE UNDERGOES
CERTAIN CHANGES. PATIENTS WITH HYPERTHYREOSIS HAVE MODERATELY OR WEAKLY
PRONOUNCED OSTEOPOROSIS MAINLY IN THE BONES OF THE HANDS. GROWTH AND
DIFFERENTIATION OF THE SKELETON AT PUBERTAL AGE IN HYPERTHYREOSIS GOES
2-5 YR AHEAD OF NORMAL. IN CASES WHEN HYPERTHYREOSIS IS ACCOMPANIED BY
HYPOGONDISM THE BONE AGE LAGS BEHIND THE NORMAL AND HIGH STATURE IS
CHARACTERISTIC OF THESE PATIENTS.   FACILITY: INST. EXP.
ENDOCRINOL. CHEM. HORM., ACAD. MED. SCI. USSR, MOSCOW, USSR.
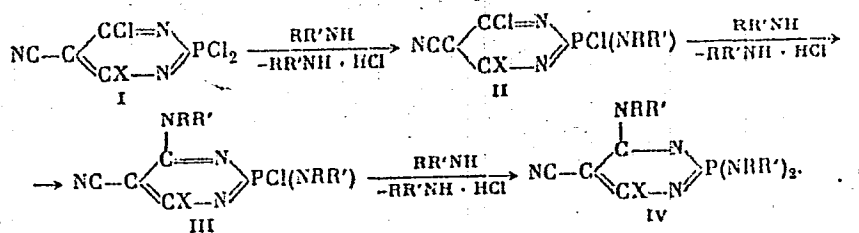
UNCLASSIFIED

· USSR

SHEVCHENKO, V. I., KALENSKAYA, A. L., and KORNUTA, P. P.

"Aminolysis of 1,1,5-trichloro-4-cyano-3-phenyl-1,2,6-phosphadiazine"

Abstract: It was reported earlier [P. P. Kornuta, et al., Dopovidi AN USSR, 533, 1970] that on interaction of phosphorus pentachloride with β-enaminonitriles $(NC)_2 C = CX\ NH_2$, cyclic compounds are formed -- 1,1,5-trichloro-4-cyano-3-alkyl(aryl)-1,2,6-phosphadiazines (I) (X = Alk, Ar). In the (I) compounds all the chlorine atoms are reactive. They easily react with the compounds containing a mobile hydrogen atom -- alcohols, amines, acids. With amines the reaction proceeds by the following scheme:

1/2

This reaction is studied in more detail in the example of 1,1,5-tri-chloro-4-cyano-3-phenyl-1,2,6-phosphadiazine (Ia, X = C_6H_5). Under the effect of the amines on the 1,1,5-trichloro-4-cyano-3-phenyl-1,2,6-phos-phadiazine (Ia), the substitution of the chlorine atoms on the amino groups proceeds in the 1-5-1 sequence. The degree of replacement of the chlorine atoms by amino groups depends on the quantitative relation of the reacting substances and especially strongly on the nature of the hydrocarbon radicals of the amine and the polarity of the solvent.

2/2

USSR   UDC 546.185

KORNUTA, P. P., KALENSKAYA, A. I., LOBANOV, O. P., and SHEVCHENKO, V. I.,
Institute of Organic Chemistry, Academy of Sciences, UkrSSR

"Phosphorylation of Monocyanoaminoethylenes"

Abstract: 1,1-Dicyano-2-aminoalkenes react with phosphorus pentachloride
forming cyclic phosphorylation products -- 1,1,5-trichloro-4-cyano-3-R-1,
2,6-phosphadiazines. In contrast, monocyanoaminoethylenes which are
capable of cis-trans isomerization react with phosphorus pentachloride
in two ways forming acyclic trichlorophosphazo-1,2-dialkyl(diaryl)-2-
cyanoethylenes and cyclic 1,1,5-trichloro-3,4-dialkyl(diaryl)-1,2,6-
phosphadiazines. Monocyanoaminoethylenes are much more reactive than
dicyanoaminoethylenes. The latter react with phosphorus pentachloride
at 80° and higher, while the monocyanoaminoethylenes react already at
20-25°, slightly exothermally. Acyclic trichlorophosphazocyanoethylenes
isomerize in the presence of HCl to cyclic phosphadiazines.

1/1

UDC 546.185

USSR

KORNUTA, P. P., KALENSKAYA, A. I., and SHEVCHENKO, V. I., Institute of
Organic Chemistry, Ukrainian Academy of Sciences

"Phosphorylation of 1,1-Dicyano-2-Aminoalkenes-1"

Abstract: Following the authors' recent proof that 1,1-dicyano-2-amino-2-
arylethylenes react with phosphorus pentachloride at the amino and dicyano
groups to form cyclic compounds, the corresponding reactions of 1,1-dicyano-
2-aminoalkenes-1 were studied. Seventeen different 1,1,5-trichloro-4-cyano-
3-alkyl-1,2,6-phosphadiazines were produced in this way from the corresponding
aminoalkenes. Physico-chemical data for the end-products, yields, and pro-
cedural details, are given.

1/1

UDC 546.185

USSR

KORNUTA, P. P., KALENSKAYA, A. I., and SHEVCHENKO, V. I., Institute of Organic Chemistry, Academy of Science Ukrainian SSR

"Reaction of Phosphorus Pentachloride with 1,1-Dicyano-2-amino-2-arylethylenes"

Abstract: It was previously shown that both malonic and lakylmalonic acid nitriles react with phosphorus pentachloride to form trichlorophosphazo-1-chloro-2-cyano-2-R-ethylenes (I) and their cyclic isomers -- 1,1,3,5-tetrachloro-4-R-1,2,6-phosphadiazines (II). In the present work it was shown that 1, 1-dicyano-2-amino-2-arylethylenes also react with phosphorus pentachloride to form 1, 1,5-trichloro-4-cyano-3-aryl-1,2,6-phosphadiazines, which in the presence of sodium phenolate convert to 1,1,5-triphenoxy-4-cyano-3-aryl-1,2,6-phosphadiazines. The acyclic isomers were also formed in the same reaction. A. V. KIRSANOV collaborated in this work.

1/1

Acc. Nr.: _AP0046760_

Ref. Code: _URO125_

USSR

UDC 621.791.75:546.56+669.35.24

RUDZĪT, R. B., KALEYS, M. A.

"Effect of Dynamics of the Compression Mechanism on Heat Concentration during T-Type Percussion Welding"

Kiev, Avtomaticheskaya Svarka (Automatic Welding), No 1, 1970, pp 49-52 (from Avtomaticheskaya Svarka, No 1, 1970, p 80)

Translation: This article contains a study of T-type percussion welding of rods and plates using the compression mechanism with different dynamic properties. It is demonstrated that by changing the free electrode acceleration it is possible to regulate the heating concentration in the contact. There are 6 illustrations and a 4-entry bibliography.

1/1

di 18

USSR

KAL'FA, A. A., URITSKIY, Z. I. (Ural State University)

"Behavior of Lower Exciton Levels in Strong Magnetic Fields"

Tomsk., Izvestiya Vysshikh Uchebnykh Zavedeniy, Fizika, February 1970, pp 7-11

Abstract: The behavior of exciton levels $n = 2$ and $n = 3$ in a strong magnetic field when the distance between the Coulomb levels is much greater than the distance between the Landau levels is studied. A comparison of the results obtained with data on magnetooptic absorption in Cu_2O is made. It is shown that the observed splitting of these levels can be explained as a consequence of the appearance of a Landau series over the Coulomb levels.

The article includes 9 equations. There are 10 references.

1/1

TITLE--BEHAVIOR OF LOWER EXCITON LEVELS IN STRONG MAGNETIC FIELDS -U-

AUTHOR-(02)-KALFA, A.A., URITSKIY, Z.L.

COUNTRY OF INFO--USSR

SOURCE--IZV. VYSSH. UCHEB. ZAVED., FIZ. 1970, 13(2), 7-11

DATE PUBLISHED-------70

SUBJECT AREAS--PHYSICS

TOPIC TAGS--EXCITON, STRONG MAGNETIC FIELD, MAGNETOOPTIC EFFECT, COPPER
OXIDE, LINE SPLITTING

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAME--1992/0900   STEP NO--UR/0139/70/013/002/0007/0011

CIRC ACCESSION NO--AT0112064
                              UNCLASSIFIED

CIRC ACCESSION NO--AT0112064

ABSTRACT/EXTRACT--(U) GP-0-   ABSTRACT. THE MAGNETOOPTICAL EFFECTS ON
EXCITONS WERE STUDIED FOR THE COULOMB LEVELS N EQUALS 2 AND N EQUALS 3
FOR THE CONDITION THAT THE WIDTH BETWEEN THEEM IS GREATER THAN THE WIDTH
BETWEEN THE LANDAU LEVELS. THE REASONS AND RULES FOR THEIR SPLITTING
WERE CONSIDERED, AND THE THEORETICAL RESULTS WERE COMPARED WITH THE
EXPTL. DATA FOR CU SUB2 O IN THE REGION OF THE YELLOW EXCITON SERIES (E.
GROSS AND ZAKHARCHENYA, 1956). THE SPLITTING WHICH WAS OBSD. IN THESE
LEVELS IS ATTRIBUTED TO THE APPEARANCE OF THE LANDAU SERIES ABOVE THE
COULOMB LEVELS.   FACILITY: URAL. GOSUNOV. IM. GOR'KOGO,
SVERDLOVSK, USSR.

UNCLASSIFIED

USSR   UDC: 532.542

BOTUK, B. O., KAL'FA, V. S.

"Some Simplifications in the Solution of Problems of the Nonuniform Motion
of a Liquid in Tubes of Circular Cross Section"

Gidravlika i gidrotekhn. Resp. mezhved. nauch.-tekhn. sb. (Hydraulics and
Hydraulic Engineering. Republic Interdepartmental Scientific and Technical
Collection), 1971, vyp. 11, pp 24-28 (from RZh-Mekhanika, No 7, Jul 71,
Abstract No 7B574)

Translation: The paper outlines some procedures for determining the criti-
cal depth h_{cr} in tubes of circular cross section; a simplified formula is
proposed for determining h_{cr} with sufficient accuracy for practical pur-
poses. A new method is presented for integrating the equation of nonuniform
motion for circular prismatic pipelines with the use of a linear relation-
ship between the relative flow characteristics and relative filling of
the cross section of the pipeline. A relationship is given for determining
the change in the coefficient of kinetic energy. Integration of the equa-
tion of nonuniform motion in a prismatic channel of circular cross section
is illustrated by an example. Authors' abstract.
1/1

TITLE--SINGLE ELECTRON REDUCTION OF CYCLOHEXADIENONES AND PHENOXY RADICALS
   BY AMINES -U-

AUTHOR-(02)-POKHODENKO, V.D., KALIBABCHUK, N.N.

COUNTRY OF INFO--USSR

SOURCE--TEOR. EKSP. KHIM. 1970, 6(1), 124-8

DATE PUBLISHED-------70

SUBJECT AREAS--CHEMISTRY

TOPIC TAGS--CYCLIC GROUP, AROMATIC KETONE, FREE RADICAL, AMINE

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY FICHE NO----FD70/605013/B03 STEP NO--UR/0379/70/006/001/0124/0128

CIRC ACCESSION NO--AP0140344
                          UNCLASSIFIED

CIRC ACCESSION NO--AP0140344

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. SOLID CYCLOHEXADIENONES (I, R
   EQUALS ME, TERT BU; X EQUALS NO SUB2, BR), TREATED WITH EXCESS ET SUB3N,
   PYRIDINE, OR PIPERIDINE IN VACUO, YIELDED PHENOXY RADICALS (II) VIA
   FORMATION OF UNSTABLE CYCLOHEXADIENONE ANION RADICALS.   II ARE REDUCED
   BY THE SECOND MOL. OF AMINE OR PYRIDINE TO PHENOLS.   RATE CONSTS. OF
   BOTH SINGLE ELECTRON STEPS WERE MEASURED OVER 30-90DEGREES.
   FACILITY: INST. FIZ. KHIM. IM. PISARZHEVSKOGO, KIEV, USSR.

UNCLASSIFIED

1/2   008   UNCLASSIFIED   PROCESSING DATE--13NOV70
TITLE--THE VELOCITY VARIATION OF A STAR AS PURELY DISCONTINUOUS RANDOM
  PROCESS. I. ZERO MASS STARS -U-
AUTHOR-(02)-KALIBERDA, V.S., PETROVSKAYA, I.V.

COUNTRY OF INFO--USSR

SOURCE--ASTROFIZIKA (USSR), VOL. 6, NO. 1, P. 135-47, FEB. 1970

DATE PUBLISHED----FEB70

SUBJECT AREAS--ASTRONOMY, ASTROPHYSICS

TOPIC TAGS--RANDOM PROCESS, STAR, VELOCITY DISTRIBUTION

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAME--3004/0132   STEP NO--UR/0388/70/006/001/0135/0147

CIRC ACCESSION NO--AP0130894
                           UNCLASSIFIED

CIRC ACCESSION NO--AP0130894
ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE VARIATION OF VELOCITY MODULUS
  OF A STAR IN THE SYSTEM IS CONSIDERED AS A PURELY DISCONTINUOUS RANDOM
  PROCESS. USING THE SECOND KOLMOGOROV-FELLER EQUATION THE EVOLUTION OF
  THE VELOCITY DISTRIBUTION FUNCTION OF ZERO MASS STARS IN AN OPEN CLUSTER
  IS INVESTIGATED WITHOUT TAKING INTO ACCOUNT THE REGULAR POTENTIAL.   THE
  ESCUPE OF STARS AND THE AMOUNT OF ENERGY, TAKEN AWAY BY THE DISSIPATED
  STARS IN DIFFERENT MOMENTS OF TIME ARE ALSO FOUND.

UNCLASSIFIED

USSR   UDC: 616.12-008.315-08:616.001.17

MIGULINA, M.A., KALIBERDIN, G.V., and FOMIN, V.S.

"Dynamics of the Phases of Myocardial Contraction Upon Exposure to High
Temperatures"

Moscow, Voyenno-Meditsinskiy Zhurnal, No 2, 1970, pp 38-40

Abstract: Exposure of eight males 22-24 years of age to 80°C for one hour
every third day for two weeks produced distinct functional shifts in myo-
cardial contractility - increased duration of the contraction period,
shortening of the ejection period, decrease in mechanical systole and hemo-
dynamic index. Repeated exposure to the same temperature at 2-10 day
intervals for two months did not result in adaptation or compensation.

1/1

1/2   025   UNCLASSIFIED   PROCESSING DATE--09OCT70
TITLE--DYNAMICS OF SYSTOLIC PHASES UNDER THE ACTION OF HIGH TEMPERATURE
-U-

AUTHOR-(03)-MIGULINA, M.A., KALIBERDIN, G.V., FOMIN, V.S.

COUNTRY OF INFO--USSR

SOURCE--VOENNO-MEDITSINSKII ZHURNAL, FEB. 1970. 1970, P. 33-40

DATE PUBLISHED--------70

SUBJECT AREAS--BIOLOGICAL AND MEDICAL SCIENCES

TOPIC TAGS--MYOCARDIUM, HEART RATE, DIAGNOSTIC METHODS, BIOLOGIC THERMAL
EFFECT, TEMPERATURE CHAMBER

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAME--1990/0929   STEP NO--UR/0177/70/000/000/0038/0040

CIRC ACCESSION NO--AP0109086
                            UNCLASSIFIED

CIRC ACCESSION NO--AP0109086

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. STUDY OF THE DYNAMICS OF SYSTOLIC
PHASES IN A GROUP OF 8 HEALTHY MALE SUBJECTS CONFINED IN A THERMOCHAMBER
EVERY THIRD DAY AT A TEMPERATURE OF 80 DEG C FOR 50 TO 70 MIN OVER A
PERIOD OF TWO WEEKS, OR OVER A PERIOD OF 2 MONTHS WITH INTERMISSIONS OF
10 DAYS AND 1 HR DAILY EXPOSURES TO 50 DEG C DURING THE INTERMISSION
PERIODS.   AN ANALYSIS OF POLYGRAPHIC CARDIAC PHASE RECORDINGS INDICATES
A SLACKENING OF THE SYSTOLIC ACTIVITY IN THE MYOCARDIUM OF THE SUBJECTS.

USSR

POTOLOTSKAYA, K. L., YEROFEYEVA, N. N., and KALIBERNAYA, Z. V.

"The Effect of Maleic Acid Hydrazide on Living Organisms"

V sb. Gidrazid Maleinovoy Kisloty kak Regulator Rosta Rast. (Maleic Acid
Hydrazide as a Regulator of the Animals' Growth), Moscow, "Nauka", 1973,
pp 333-335 (from RZh - Biologicheskaya Khimiya, No 22, Nov 73, Abstract No 2055)

Translation: Daily administration of the preparation GMK-D and GMK-Na in a
dose of 0.75 - 6 mg/kg for 25-30 days to rats had no detrimental effects on
weight and general state of the animals. The anatomic-pathological state was
identical in the experimental and control group; GMK does not accumulate in
organs.

1/1

USSR   UDC 620.198:621.785.53

KALICHAK, T. N., POKHMURSKIY, V. I., POBEREZHNYY, Ya. L., ALEKSEYENKO, M. F.,
MEL'NIKOVA, N. N., Academy of Sciences Institute of Physics and Mechanics,
L'vov; Moscow.

"Influence of Galvanic and Nonmetallic Coatings on Endurance of Martensitic
Stainless Steel"

Abstract: This work describes a study of the influence of galvanic (nickel-
cadmium) and polymer coatings on the strength of type 1Kh12N2VMF stainless
steel under cyclical loading at various temperatures and in the presence of
corrosive media. Before the coatings were applied, the specimens were heat
treated by hardening from 1,020°C and tempering at 660°C (3 hours), as well
as low temperature annealing at 725°C (3 hours). Metallographic studies
showed that application of the nickel-cadmium coating to the surface formed
an even, thin layer with a total thickness of 9 to 15 μ, the cadmium layer
being 2 to 3 μ thick. The nickel-cadmium coating has a negative influence
on the endurance limit in air, but more than doubles the corrosion fatigue
resistance in 3% NaCl. Nickel-cadmium coatings protect steel well from the
effects of high temperatures. The polymer coating, about 0.1 mm thick, had
1/2

USSR   UDC 620.198:621.785.53

KALICHAK, T. N., POKHMURSKIY, V. I., et. al., Kiev, Fiziko-khimicheskaya
Mekhanika, Materialov, Vol 8, No 4, 1972, pp 12-15.

no influence on the endurance of the steel in air, but more than tripled
the corrosion fatigue resistance in 3% NaCl. The effect was maximum with
high loading amplitudes and fewer cycles (up to 10^7). Corrosive damage
to the metal beneath the polymer coating was found to result primarily
from damage to the polymer coating caused by the loading stress, allowing
the corrosive medium to penetrate through the coating to the steel.

USSR   UDC: 620.178.38

KARPENKO, G. V., POKHMURSKIY, V. I., and KALICHAK, T. N., Physicomechanical
Institute, Academy of Sciences, Ukrainian SSR

"A Procedure for Testing Materials for Strength af Elevated Temperatures and
With Periodic Wetting by a Liquid Corrosive Medium"

Moscow, Zavodskaya Laboratoriya, No 10, 1971, pp 1243-1245

Abstract: For evaluating the fatigue strength of blade material of special
power installations (boiler units), a new procedure has been developed for the
fatigue testing of heated samples periodically wetting by sprinkling with a
corrosive medium (water, sea water, etc.); the conditions of such tests are
similar to those encountered in operation. The article describes a method
and a machine for the fatigue testing of materials, with the simultaneous
action of elevated temperatures (up to 400°C), variable stresses, and periodic
wetting of the samples by a corrosive medium. The temperature fluctuations
during these tests under conditions of elevated temperatures comprised ± 5°C,
the periodicity of the cycle was 1.5 minutes, the corrosive medium was distilled
water. Tests results are presented for samples of steels 1KH12R2VMF and
1KH12R2MVFBA. 2 figures. 1 table. 8 references.

1/1

KANCHAVELI, L. A., Academician of the Academy of Sciences Georgian SSR, and
KALICHAVA, G. S., Georgian Institute of Plant Protection

"Interrelationship Between Photosynthetic Activity and Incidence of Disease
in Plants"

Abstract: Electronic paramagnetic resonance (EPR) determinations were per-
formed in tobacco leaves, healthy and with mosaic virus, and on lemon leaves,
healthy and with malsecco fungus wilt. In healthy leaves, the intensity of
the EPR signals in red light was higher by a factor of 3-4 than in darkness.
In diseased leaves, that increment amounted to only 1.5. The difference is
due to a disturbance in photosynthetic processes in some portions of the
leaves. After appropriate chemotherapy with drugs containing Fe and Mg, the
rise in EPR signal intensity in red light became almost normal. Evidently,
these compounds restore the metabolism of mitochondria, chloroplasts, and
microsomes. With additional illumination, the EPR signals in healthy plants
were 35% less intense than in red light alone (Emerson effect, which depends
on the proper functioning of two photo systems), while in diseased leaves
1/2

USSR

KANCHAVELI, L. A., and KALICHAVA, G. S., Soobshcheniya Akademii Nauk Gruzinskoy
SSR, Vol 64, No 2, 1971, pp 469-472

that decrement amounted to only 25%. This reduction in the Emerson effect
may be due to a disturbance in the very labile, manganese-containing enzymatic
system which is directly responsible for the release of oxygen during photo-
synthesis.

2/2

USSR   UDC: 51:621.391

KALIKA, V. L., MARTYNOV, A. P.

"On Accounting for the Vagueness of Initial Data in Optimum
Planning Problems"

Ufa, Mat. metody v ekon. issled.--sbornik (Mathematical Methods
in Economics Research--collection of works), 1971, pp 5-56 (from
RZh-Kibernetika, No 10, Oct 72, abstract No 10V545)

Translation: A survey based on materials of papers by Soviet
authors. Bibliography of 45 titles.

1/1

USSR

UDC: 51:621.391

KALIKA, V. I., FARFEL', S. Ya.

"Remarks on the Solution of a Problem of Transport Type"

Ufa, Mat. metody v ekon. issled.--sbornik (Mathematical Methods in Economics Research--collection of works), 1971, pp 88-94 (from RZh-Kibernetika, No 10, Oct 72, abstract No 10V504)

[No abstract]

1/1

USSR   UDC: 51:621.391

KALIKA, V. I.

"Mathematical Aspects of Formulation and Solution of a Problem
in Transport Optimization"

Ufa, Mat. metody v ekon. issled.--sbornik (Mathematical Methods
in Economics Research--collection of works), 1971, pp 77-87 (from
RZh-Kibernetika, No 10, Oct 72, abstract No 10V504)

Translation: The paper deals with the problem of optimizing con-
veyance of various products by different forms of transport with
limited handling capacity. This problem may be reduced in a
natural way to a special model of the network transport problem
with additional constraints.

1/1

USSR   UDC   621.371.332

AFRAYMOVICH, E. L., VUGMEYSTER, B. O., and KALIKHMAN, A. D.

"Effect of Lower-Placed Ionization on the Spectral Characteristics
of a Signal Reflected from Layer 2"

Moscow, V sb. X Vses. konf. po rasprostr. radiovoln. Tezisy dokl.
Sekts. 8 (Tenth All-Union Conference on the Propagation of Radio
Waves; Report Theses; Section 8--collection of works) "Nauka,"
1972, p 154 (from RZh--Radiotekhnika, No 10, 1972, Abstract No
10A395)

Translation: Computations are made of the spectral characteristics
of a signal reflected from the F layer as from a mirror, with the
E layer taken into account. It is shown that the signal analyzed
on the ground undergoes marked modulation determined by the para-
meters of the E layer (velocity, half-thickness, dimensions of
nonuniformities). Results of the computation agree closely with
the dynamic spectra of the radio signal, given in the paper, ob-
tained from the experimental data by simultaneous observations of
the signal from the E and F layers. Resume
1/1

TITLE--APPROXIMATION METHOD FOR CALCULATING THE BOUNDARY LAYER ON A TWO
    TEMPERATURE PLASMA ON ELECTRODES WITH HIGH VALUES FOR THE HALL

AUTHOR---KALIKHMAN, L.YE.

COUNTRY OF INFO--USSR

SOURCE--ZH. PRIKL. MEKH. TEKH. FIZ. 1970, (1), 44-52

DATE PUBLISHED-------70

SUBJECT AREAS--PHYSICS

TOPIC TAGS--BOUNDARY LAYER PLASMA, APPROXIMATION METHOD, BOUNDARY LAYER
    EQUATION, ARGON, ELECTRODE PROPERTY, HALL CONSTANT

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAME--1996/1456   STEP NO--UR/0207/70/000/001/0044/0052

CIRC ACCESSION NO--AP0118445
                              UNCLASSIFIED

CIRC ACCESSION NO--AP0118445
ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THEORETICAL. THE USEFULNESS OF
THE DERIVED METHOD FOR A FULLY IONIZED PLASMA IS DEMONSTRATED USING AN
EXAMPLE OF A BOUNDARY LAYER OF AR PLASMA ON A POS. ELECTRODE.

UNCLASSIFIED

KALIKHMAN, M. Ya.

JPRS 55863
4 May 72

- 41 -

UDC 551.511.12

PROPOSALS FOR DESIGNING MODELS OF THE INTERNATIONAL STANDARD ATMOSPHERE

[Article by Professors S. S. Gaygerov, E. D. Zhdrova, N. A. Kofanova, M. Ya. Kalikhman; Candidates of Geographic Sciences Yu. P. Koshel'kov, D. A. Tarasenko; Professor Ye. G. Shvidkovskiy, L. V. Shcherbakova, Central Aerological Observatory; Moscow, Meteorologiya i Gidrologiya, Russian, No 2, 1972, submitted 6 July 1971, pp 38-48]

A study was made of the vertical profile of the mean annual temperature of the hemisphere and also models of the standard atmosphere for different latitudinal zones and possible longitudinal variations. The characteristic of the data used to construct the models of the standard atmosphere is presented.

Introduction

The present proposals with respect to expansion of the International standard atmosphere are presented in the procedures for execution of the resolutions of the meeting of the Working Group of the ISO [International Standardization Organization] TK-20/RG-6 26-29 May 1969. The working group adopted the resolution to charge the USA (A. E. Cole) and the USSR (Ye. G. Shvidkovskiy) with preparing the design for models of the International standard atmosphere for altitudes of 20-60 km (the mean distribution and the models reflecting the latitudinal and seasonal variations). In the resolution there is a recommendation regarding the necessity of selecting the temperature profile closest to the mean annual profile with respect to the Northern Hemisphere for the mean models. At the meeting of the working group, it was recognized as desirable to expand the standard atmosphere to 80 km, consider- ing the data in the 60-80 km layer au a supplement to the basic profile.

The given proposals were presented by the Soviet Union for examination by the Sixth Working Group of the Twentieth Technical Commission of the Inter- national Standardization Organization (ISO/TC/WG = 6) -- Standard Atmosphere -- a meeting of which was held in France (Poeurbevoir) in February 1970.

1/3   015   UNCLASSIFIED   PROCESSING DATE--09OCT70
TITLE--RESULTS OF OBSERVATION OF SPRING RESTRUCTURING OF CIRCULATION IN
   THE SOUTHERN HEMISPHERE USING METEOROLOGICAL ROCKETS, SPRING
AUTHOR-(03)-GAYGEROV, S.S., ZAYCHIKOV, B.P., KALIKHMAN, M.YA.

COUNTRY OF INFO--USSR

SOURCE--CENTRAL AEROLOGICAL OBSERVATORY; MOSCOW, IZVESTIYA AKADEMII NAUK
   SSSR, FIZIKA ATMOSFERY I OKEANA, VOL VI, NO 4, 1970, PP 381-387
DATE PUBLISHED------70

SUBJECT AREAS--ATMOSPHERIC SCIENCES, MISSILE TECHNOLOGY, MECH., IND.,
   CIVIL AND MARINE ENGR
TOPIC TAGS--METEOROLOGIC ROCKET, ATMOSPHERIC CIRCULATION, OCEANOGRAPHIC
   SHIP, STRATOSPHERE, MESOSPHERE/(U)A I VOYEYKOV SHIP

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAME--1994/0364   STEP NO--UR/0362/70/006/004/0381/0387

CIRC ACCESSION NO--AP0114657
                             UNCLASSIFIED

UNCLASSIFIED   PROCESSING DATE--09OCT70

CIRC ACCESSION NO--AP0114657

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. DURING THE 18TH VOYAGE OF THE
RESEARCH VESSLE "A. I. VOYEYKOV" A DETAILED STUDY WAS MADE OF THE
ATMOSPHERE USING RADIOSONDES AND METEOROLOGICAL ROCKETS IN THE INDIAN
OCEAN. THE RESULTS OF THESE OBSERVATIONS WERE CHARACTERISTIC FOR SUMMER
CONDITIONS IN THE MIDDLE LATITUDES WITH EASTERLY WINDS IN THE
STRATOSPHERE AND A LOW TEMPERATURE IN THE MESOSPHERE.   THE COLLECTED
DATA AGREE RATHER WELL WITH THE COSPAR STANDARD ATMOSPHERE CIRA-1965.
REGULAR RADIOSONDE OBSERVATIONS WERE MADE THREE TIMES PER DAY DURING THE
ENTIRE VOYAGE. ROCKET SOUNDING YIELDED TEMPERATURE DATA TO AN ALTITUDE
OF ABOUT 80 KM AND WIND DATA TO 50-55 KM. THE OBSERVED CHARACTERISTIC
PROCESSES ARE DESCRIBED: WARMING IN THE UPPER STRATOSPHERE IN THE
50DEGREES LATITUDE RANGE, REVERSAL OF THE HORIZONTAL TEMPERATURE
GRADIENT, CHANGE IN ALTITUDE OF THE STRATOPAUSE, CHANGE IN VELOCITY OF
STRATOSPHERIC JET STREAMS AND DISPLACEMENT OF THE STRATOSPHERIC
ANTICYCLONE SITUTATED OVER THE SOUTHERN PART OF THE OCEAN IN THE
DIRECTION OF THE ANTARCTIC CONTINENT. FOR EXAMPLE, THE OBSERVATIONS
FOR THE FIRST TIME DISCLOSED STRONG STRATOSPHERIC WARMING IN THE ZONE
45-55DEGREESS AT ALTITUDES 30-45KM. THE REGION OF WARMING CORRESPONDS
TO CURRENT CONCEPTS CONCERNING THE INITIAL STAGE OF SPRING RESTRUCTURING
OF STRATOSPHERIC CIRCULATION WHICH INDICATE THAT THE WARMINGS FIRST ARE
DETECTED AT HIGH LEVELS AND IN THE RELATIVELY LOW LATITUDES AND THEN ARE
PROPAGATED DOWNWARD AND POLEWARD. IN THE SOUTHERN HEMISPHERE THE
MAXIMUM ZONE CONTENT IS AT 50-55DEGREESS.

UNCLASSIFIED

CIRC ACCESSION NO--AP0114657
ABSTRACT/EXTRACT--IT MAY BE THAT THE CONSIDERABLE RADIATION HEATING OF THE
   OZONE LAYER IN THE REGION OF ITS MAXIMUM SERVES AS THE PRIME MOVING
   FACTOR FOR THE FURTHER DEVELOPMENT OF THE LARGE SCALE RESTRUCTURING
   PROCESS. THIS PROCESS TAKES PLACE BY THE PROPAGATION OF RIDGES OF
   ANTICYCLONES SOUTHWARD FROM THE LOW LATITUDES AND THE GRADUAL EXPULSION
   OF THE FILLING POLAR CYCLONE INTO THE SOUTH AMERICAN SECTOR OF
   ANTARCTICA.

UNCLASSIFIED

172   025   UNCLASSIFIED   PROCESSING DATE--30OCT70
TITLE--VERTICAL DISTRIBUTION OF THE MAIN METEOROLOGICAL PARAMETERS AND
   LARGE SCALE PROCESSES IN THE STRATOSPHERE AND MESOSPHERE -U-
AUTHOR-(05)-GAYGEROV, S.S., ZAYCHIKOV, B.P., KALIKHMAN, M.YA., SEDOV,
   V.YE., TARASENKO, D.A.
COUNTRY OF INFO--USSR

SOURCE--COSPAR, PLENARY MEETING, 13TH, LENINGRAD, USSR, MAY 20-29, 1970,
   PAPER. 42P
DATE PUBLISHED-------70

SUBJECT AREAS--ATMOSPHERIC SCIENCES

TOPIC TAGS--STRATOSPHERE, MESOSPHERE, VERTICAL PROFILE, TEMPERATURE,
   ATMOSPHERIC CIRCULATION, METEOROLOGIC ROCKET, OROGRAPHY

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAME--3001/0005   STEP NO--UR/0000/70/000/000/0042/0042

CIRC ACCESSICN NO--AT0125845
                         UNCLASSIFIED

CIRC ACCESSION NO--AT0125845
ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. DESCRIPTION OF VERTICAL
TEMPERATURE PROFILES AND GLOBAL CIRCULATION PATTERNS IN THE STRATOSPHERE
AND MESOSPHERE, USING ROCKET DATA FROM RESISTANCE THERMOMETER,
THERMISTOR, AND GRENADE MEASUREMENTS. THE OBTAINED MEAN TEMPERATURE
DISTRIBUTION AS A FUNCTION OF ALTITUDE IS COMPARED WITH DIFFERENT
STANDARD AND REFERENCE ATMOSPHERES. SEASONAL AND LATITUDINAL
TEMPERATURE VARIATIONS ARE CONSIDERED TOGETHER WITH LONGITUDINAL
VARIATIONS IN THE NORTHERN HEMISPHERE. ANALYSIS OF PRELIMINARY GLOBAL
CIRCULATION PATTERNS IN THE UPPER STRATOSPHERE AND LOWER MESOSPHERE
SHOWS THAT SUMMER ANTICYCLONIC CIRCULATION IS POLARLY SYMMETRICAL AND IS
PRACTICALLY THE SAME IN BOTH HEMISPHERES. WINTER CIRCULATION IN THE
SOUTHERN HEMISPHERE IS LESS PERTURBED DUE TO THE OROGRAPHY AND
UNIFORMITY OF THE UNDERLYING SURFACE IN THIS HEMISPHERE.
FACILITY: GLAVNOE UPRAVLENIE GIDROMETEOROLOGICHESKOI SLUZHBY SSSR,
MOSCOW, USSR.

UNCLASSIFIED

Powder Metallurgy

USSR   UDC 621.762.669.018.24(088.8)

LOBCVA, T. A., KALIKHMAN, V. L., ZELIKMAN, A. N., and PRAVOVEROVA, L. L.,
Moscow Institute of Steel and Alloys

"Conducting Solid Lubricant"

Translation of Abstract: The inventors suggest a high-efficiency antifriction
lubricant containing Nb or Ta diselenide in the form of a solid solution in W
or Mo diselenide. The lubricant is composed of 0.5–30 mol.% $NbSe_2$ or $TaSe_2$
and 99.5–70% $MoSe_2$ or WSe_2. The lubricant has high moisture resistance.
Electrical and antifriction properties of the lubricants are presented. One
table.

1/1

1/2   025   UNCLASSIFIED   PROCESSING DATE--13NOV70
TITLE--EFFECT OF THE CHEMICAL STATE OF THE SURFACE ON POSITRONIUM
ANNIHILATION CHARACTERISTICS IN POROUS SYSTEM -U-
AUTHOR-(05)-LEVIN, B.M., MOKRUSHIN, A.D., KALIKO, M.A., GOLDANSKIY, V.I.,
PERVUSHINA, M.N.
COUNTRY OF INFO--USSR

SOURCE--DOKL. AKAD. NAUK SSSR 1970, 191(4), 855-

DATE PUBLISHED-------70

SUBJECT AREAS--CHEMISTRY, PHYSICS

TOPIC TAGS--SPECTROSCOPIC ANALYSIS, POROSITY, PHYSICAL CHEMISTRY PROPERTY,
SILICA GEL, ALUMINA, SODIUM, ISOTOPE, POSITRON, PARTICLE ANNIHILATION

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAME--3004/0774   STEP NO--UR/0020/70/191/004/0855/0858

CIRC ACCESSION NO--AT0131368
                              UNCLASSIFIED

CIRC ACCESSION NO--AT0131368

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. A RELATIVE STUDY WAS MADE OF THE
TIME SPECTRA FOR POSITRON ANNIHILATION IN MEDIUM SIZED POROUS SAMPLES OF
SILICA GEL, ALUMINA GEL, AND ALUMNIOSILICATE CATALYST. THE LIFETIME OF
THE POSITRONIUM WAS MEASURED BY OBSERVING THE DELAYED COINCIDENCES OF
ONE OF THE ANNIHILATION (0.5 MEV) GAMMA QUANTA AND THE 1.3-MEV NUCLEAR
GAMMA QUANTA WHICH IS IN A CASCADE WITH THE POSITRON, WHICH GIVES A
MEASURE OF THE TIME FOR THE EMISSION OF A POSITRONIUM BY THE PRIME22 NA
SOURCE. THE OBSD. DIFFERENCE IN THE QUENCHING OF THE LIFETIME FOR THE
ORTHOPOSITRONIUM, TAU SUB3, IN 2 SAMPLES OF THE CATALYST DEPENDING ON
THE DEGREE OF DEHYDRATION OF THEIR SURFACE ALLOWS THE ORDER OF MAGNITUDE
OF THE RATE FOR THE REACTION H PRIME POSITIVE EQUALS P SUBS YIELDS H
PLUS E PRIME POSITIVE PLUS E SUBE PRIME POSITIVE IS THE EXCESS ENERGY
REMOVED BY THE POSITRON, TO BE EVALUATED FOR POSITRONIUM ATOMS WHICH ARE
LOCALIZED IN THE PORES. IN THE RANGE OF RELATIVE PRESSURES, P-P SUBS
EQUALS 0.2-0.014, THE SP. RATE OF QUENCHING OF THE POSITRONIUM IS
(.05-1.0) TIMES 10 PRIME7-SEC. BECAUSE OF THE REPEATED COLLISION OF THE
POSITRONIUM WITH THE WALLS OF THE PORES, THIS RATE OF QUENCHING CAN
ENSURE A NOTICEABLE DECREASE IN THE POSITRONIUM'S LIFETIME FOR VERY
SMALL SURFACE CONCNS. OF H PRIME POSITIVE IONS IN THE PORES.
FACILITY: INST. KHIM. FIZ., MOSCOW, USSR.

Ion Exchange

USSR   UDC: 541.1238/.9

GOL'DANSKIY, V. I., Corresponding Member Academy of Sciences USSR, LEVIN
B. M., MOKRUSHIN, A. D., KALIKO, M. A., and PERVUSHINA, M. N., Institute
of Chemical Physics, Moscow, Academy of Sciences USSR: All Union Scienti-
fic Research Institute of Oil Refining, Ministry of Petroleum USSR

"Effect of the Chemical State of the Surface on Annihilation Characteris-
tics of Positronium in Porous Systems"

Moscow, Doklady Akademii Nauk, SSSR, Vol 191, No 4, Apr 70, pp 855-858

Abstract: The authors studied annihilation of positronium atoms localized
in the pores of medium porous samples of silica gel, alumina and aluminum-
silicon catalyst in an attempt to develop a method for determination of the
volume and surface of the pores, since in such pores positronium exists
much longer. The life span of positronium was measured by observing de-
layed coincidence of one of the annihilating γ-quanta and the nuclear
γ-quantum in series with the positron which yielded a time tag for the
emission of a positron by the Na^{22} source. Because of instrumental limit-
ation the τ_2 component of the time spectrum could not be determined. Only

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USSR

GOL'DANSKIY V. I., et al, Doklady Akademii Nauk, SSSR, Vol 191, No 4, Apr 70, pp 855-858

the characteristics of the longest component connected with the loss of positronium atoms could be obtained -- average life span (τ_3) and intensity (I_2).

At the pressure $p=p_s$ (pressure of saturated water vapor at room temperature) τ_3 was absent and I_2 was zero. In the range $p/p_s=1-0.3$ I_2 increases sharply while τ_3 remains quite unchanged. At pressures $p/p_s<0.3$ the situation becomes different. In the case of the aluminum-silicone catalyst there occurs a strong quenching of positronium and along with τ_3 time a drop in I_2 occurs with the decrease of p/p_s. No quenching of positronium occurs in silica gel while only slight quenching occurs in alumina accompanied by a small change in I_2. A relationship exists between the strength of Bronsted acid centers and the changes in τ_3 and I_2.

2/2

1 1

USSR   UDC 621.372.413-434.1

KALIKINSKIY, I. I.

"Excitation of a Semi-open Cylindrical Resonator with a Dielectric Core by a Uniformly Moving Point Charge"

Moscow, Radiotekhnika i elektronika, Vol XVII, No 2, 1972, pp 256-263

Abstract: Expansion of an infinite region with a continuous spectrum with respect to eigenfunctions is used to solve the problem of excitation of a semi-open cylindrical resonator with a dielectric core by a uniformly moving point charge. The eigenfunctions of the continuous spectrum are orthogonal for $\lambda_n < \chi < \infty$ in an open resonator. Thus, the stated problem can be solved using the expansion with respect to these functions. Orthogonalness of the functions of the continuous spectrum can be proved also for more complex resonators [L. A. Vaynshteyn, Otkrytyye rezonatory i otkrytyye volnovody, Soviet Radio Press, 1966]. The only peculiarities of these functions are simple poles at the points corresponding to nondamping and weakly damping natural oscillations of the resonator. In order to obtain the amplitudes of the weakly damping oscillations excited by the charge it is not necessary to know the mentioned functions in the entire space. Their asymptote must be known on the line of movement of the charge, and the form of the eigenfunctions of the weakly damping oscillations must be known into which the eigenfunctions
1/2

of the continuous spectrum convert when $\chi = \chi_{ns}$. Weakly damping oscillations in a dielectric plate are typical of open resonators. The frequencies of these oscillations turned out to be close to the frequencies of the corresponding closed resonator. The functions describing the process of excitation of the weakly damping oscillations of open resonators and the corresponding oscillations of closed resonators turned out to be similar. The functions of the continuous spectrum have no branch points in the complex plane χ.

2/2

- 124 -

Hematology

KACHMARCHIK, E. V. and KALIKOV, V. N., Komi Pedagogical Institute, Syktyvkar

"Measuring the Diameters of Erythrocytes With a Laser Beam"

Moscow, Laboratornoye Delo, No 3, 1973, pp 138-139

Abstract: The suggested laser technique is based on the phenomenon of diffraction of light as it passes through a thin blood smear that serves as an optical grating. The diameter of the diffraction rings is inversely proportional to the diameter of the erythrocytes. The narrow (1 mm^2) monochromatic, spatially coherent light rays of a gas laser (LDI-67) produces distinct diffraction rings. The laser beam is maximally diaphragmed and a slide with a blood smear is inserted into the holder. When the screen is drawn back, the diffraction rings appear on it. The radius of the erythrocytes is computed from the formula $r = \dfrac{0.44 \, \lambda \cdot 2L}{D}$, where r is the radius, D is the diameter of the ring on the screen, and L is the distance from the blood smear to the screen.

1/1

USSR

KALIMOV, A. I., MALYATIN, V. V., POCHTENNYY, Ye. K.

"Investigation of the Kinetics of Steel Destruction Under Impact Loading"

Translation: The paper presents a method of recording the distribution of
cracks in flat steel specimens under dynamic tension using a high-speed
photo unit. Heat-treated stamped steel grades 5KhNM and 4Kh5V2FS was in-
vestigated. An analysis is given of the speed of crack propagation as a
function of impact speed, the initial damage to the specimen (produced by
different stress concentrators), the dynamic strength limit and the thick-
ness of the specimen. Oscillograms of the force-time relation are given.
Resistance strain gauges were used as the pickups. The oscillograms were
recorded on the S1-18 and S1-37 cathode-ray oscillographs.

1/1

USSR

MUZRABEKOV, Sh. M., NADZHIMUTDINOV, K. N., and KAMILOV, I. K., Tashkent
Medical Institute

"Effect of Tetramethylthiuram Disulfide (TMTD) on the Action of Some Drugs"

Abstract: TMTD, a pesticide used to treat cotton seeds, grains, etc., was
found to potentiate the effect of the hypnotic hexobarbital and that of the
convulsant pentylenetetrazol in rats. TMTD injected intraperitoneally at
doses ranging from 1/20 to 13 LD_{50} after the administration of hexobarbital
increased the duration of the animals' sleep by 65%. At the larger dose the
effect persisted 5 days. At doses of 150 and 120 LD_{50} TMTD injected intraperi-
toneally into rats given pentylenetetrazol intensified the convulsions by 25
and 75%, respectively. Prolonged injection of low doses of the pesticide had
a wavelike effect, the peak occurring after the first month. Both hexobarbital
and pentylenetetrazol are known to be metabolized in the liver. The intensi-
fication of their effects under the influence of TMTD is attributed to the
inhibitory action of the pesticide on microsome metabolism in the liver.

1/1

USSR

UDC 539.3

PEKERMAN, Z. M., KALIMOV, K. Z.

"On Large Bends of Orthogonal Panels Rectangular in Plan"

Translation: The solution of the problem of large bends of a hollow rectangular orthotropic shell under the action of a uniform external pressure and axial compression is discussed. Two cases of support are considered: free and hinge fixed. The bending and the stress function are found in trigonometric series by the Bubnov method. Biharmonic terms enter into the stress function such that both the kinematic and static boundary conditions and also the equations for conjunction of deformations are satisfied exactly. The solution has rapid convergence, making it possible to restrict oneself to one or two terms of the Fourier series. N. V. Kolkunov.

1/1

USSR   UDC 541.69+547.241+591.0446

NEKLESOVA, I. D., KUDRINA, M. A., IRAIDOVA, I. S., KALIMULLIN,
M. K., Institute of Organic and Physical Chemistry imeni A. Ye.
Arbuzov, Academy of Sciences USSR

"Metabolism of Phosphoric Acid Ester Amides"

Abstract: A study is described on the selective effectiveness of
organophosphorus contact-type insecticides of the DDVP (0,0-
dimethyl 0-2,2-dichlorovinyl phosphate) group. The in vitro-based
data were followed up and confirmed by in vivo experiments. It
is shown that O-methyl 0-2,2-dichlorovinyl phosphate (II) and
O-ethyl 0-2,2-dichlorovinyl N-dimethylamidophosphate (III) are
highly active insecticides, cholinesterase inhibitors in insects
and warm-blooded animals and are aliesterase inhibitors in house-
flies. 0-2,2-dichlorovinyl N-tetramethyldiamidophosphate (IV) is
a relatively weak cholinesterase inhibitor in insects and warm-
blooded animals. Compound II exhibits a systemic effect on in-
sects with gnawing mouth parts. The toxicity and anticholin-
esterase activity of II, III and IV in flies is correlated. As
1/2

USSR

NEKLESOVA, I. D., et al, <u>Khimiya v sel'skom khozyaystve</u>, No 11, 1971, pp 39-42

for warm-blooded animals, the correlation was established only for II and III. Despite its low anticholinesterase activity, compound IV appears to be most toxic to white mice. Compound II is detoxified by liver tissue of warm-blooded animals, while IV is activated by them. Compound IV selectively affects the aliesterase of flies but is weakly active relative to the flies per se. This indicates that the insecticide activity of the organophosphorus compounds is not a result of aliesterase inhibition. The experimental data on the toxicity, antiesterase and anticholinesterase activities of the tested compounds are given in tables.

2/2

1/2   015   UNCLASSIFIED   PROCESSING DATE--20NOV70
TITLE--POSITION OF ENTEROCOCCI IN THE SYSTEM OF MICROORGANISMS -U-

AUTHOR--KALINA, A.P.

COUNTRY OF INFO--USSR

SOURCE--ZHURNAL MIKROBIOLOGII, EPIDEMIOLOGII I IMMUNOBIOLOGII, 1970, NR 6,
PP 20-21
DATE PUBLISHED--------70

SUBJECT AREAS--BIOLOGICAL AND MEDICAL SCIENCES

TOPIC TAGS--BACTERIOLOGY, STREPTOCOCCUS, BACILLUS

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAME--3001/0356   STEP NO--UR/0016/70/000/006/0020/0021

CIRC ACCESSION NO--AP0126112
                            UNCLASSIFIED

CIRC ACCESSION NO--AP0126112
ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. ON THE BASIS OF LITERATURE AND
PERSONAL EVIDENCE BASED ON THOROUGH STUDY OF 561 STRAINS OF ENTEROCOCCI
OF VARIOUS ORIGIN, THE AUTHOR HAS SEPARATED THIS GROUP OF MICROORGANISMS
INTO AN INDIVIDUAL GENUS ENTEROCOCCUS. THE LATTER SHOULD BE INTRODUCED
INTO THE TRIBE STREPTOCOCCEAE OF THE LACTOBACILLACEAE FAMILY, AND SHOULD
INCLUDE TWO SPECIES: ENTEROCOCCUS FAECALIS (WITH VARIANTS LIQUEFACIENS
AND ZYMOGENES), AND ENTEROCOCCUS FAECIUM WITH A VARIANT DURANS.
FACILITY: GOSUDARSTVENNY KONTROL'NYY INSTITUT MEDITSINSKIKH
BIOLOGICHESKIKH PREPARATOV. IM. L. A. TARASEVICHA.

KALINA, G. G., Institute of General and Communal Hygiene imeni Sysin,
Academy of Medical Sciences USSR

"A Method of Preparing a Magnesium Medium for Isolation of Salmonella from
the Water of Open Water Bodies Under Fieldwork Conditions"

Abstract: The use of a yeast extract instead of a yeast dialysate is suggested
in order to simplify the preparation of the magnesium medium required for Salmo-
nella tests. The extract is made by suspending 1 kg of pressed baker's yeast
in 2 L of distilled water, sterilizing the suspension with steam for 30 min,
letting it stand at $4^\circ C$ for 5-6 days, decanting the supernatant fluid, adding
1.25 ml of a 0.01% aqueous solution of crystalline violet to each 100 ml of
the supernatant fluid, bottling the extract in appropriate flasks, and heating
the flasks to $100^\circ C$ for 30 min. The extract contains 225-260 mg% of total
nitrogen and 30-36 mg% of amino nitrogen. Each 100 ml of river or lake water
collected for analyses receive: 3.9 g $MgCl_2 \cdot 7H_2O$; 0.8 g NaCl; 0.16 g KH_2PO_4;
5 ml of a 10% peptone solution; 2.2 ml of the yeast extract; and 0.5 ml of a 0.1%
aqueous solution of brilliant green. After the salts have dissolved, the mixture

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USSR

KALINA, G. G., zhurnal Mikrobiologii Epidemiologii i Immunobiologii, No 12, 1972, pp 133-134

is incubated at 37°C for 1 day and then utilized in the usual manner. Evaluation tests performed on 19 samples of polluted water yielded 23% of positive results with the use of the standard magnesium medium and 68.6% of positive results with the use of the modified reagent. The method is recommended not only for fieldwork but also for laboratory work.

2/2

USSR   UDC 612.791-7

KALINA, V. K., TERESHCHENKO, Yu. I., and TISHCHENKO, F. M., Chair of
Medical Radiology, Kiev Institute of Advanced Training for Physicians,
Kiev

"A Device for Measuring the Amount of Oxygen Absorbed by Different Parts
of the Human Skin"

Kiev, Vrachebnoye Delo, No 6, Jun 71, pp 119-122

Abstract: An apparatus for determining the amount of O_2 that is absorbed
by different areas of the human skin has been developed, which comprises
1) an electrolytic O_2 compensator consisting of a vessel filled with a
$CuSO_4$ solution and equipped with two electrodes, 2) a gas-exchange vessel
with an absorber for CO_2 and H_2O, 3) a liquid-filled U-shaped manometer
with a floating contact, and 4) an electronic recorder, a power source,
integrating unit, and monitoring indicators.

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USSR

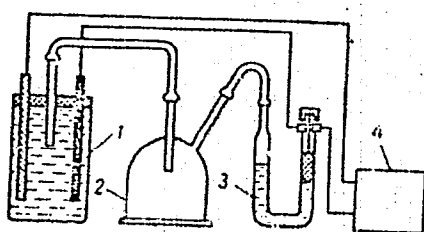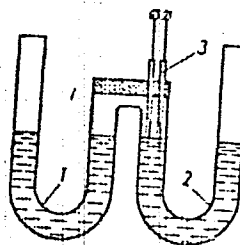KALINA, V. K., et al., Vrachebnoye Delo, No 6, Jun 71, pp 119-122

Рис. 1.   Рис. 3.

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USSR

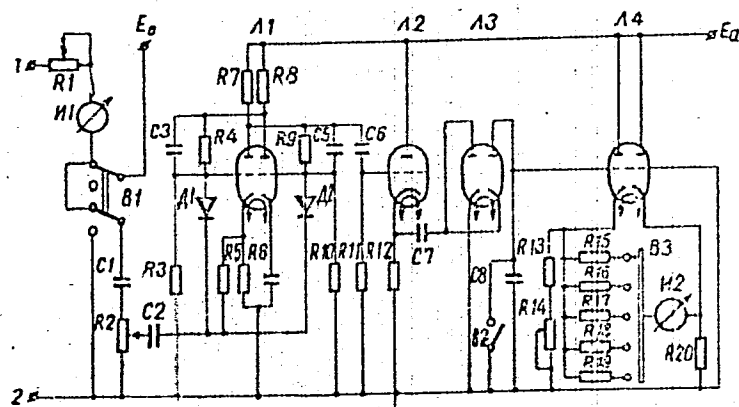KALINA, V. K., et al., Vrachebnoye Delo, No 6, Jun 71, pp 119-122

Рис. 2.

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USSR

KALINA, V. K., et al., Vrachebnoye Delo, No 6, Jun 71, pp 119-122

After a certain volume of O_2 has been absorbed by the skin, the pressure in (2), which has been initially equal to that in (1), decreases, activating (3) with the result that the floating contact in one of the legs of (3) is lowered and current passes through (1), developing O_2 that flows into (2). Current passes through (1) until an equal pressure in (2) and (1) is restored. When more O_2 has been absorbed from (2) by the skin, the cycle is repeated. The amount of current that passes through (1), which is equivalent to the amount of O_2 absorbed by the skin, is measured and recorded. At a consumption of O_2 less than 5-10 cm^3, a more precise electrolytic contact is used that consists of a 2d U-tube filled with a liquid electrolyte that rises in one of the legs of the tube when the pressure in (2) drops, unbalancing the liquid levels in the first U-tube. The rising liquid in the 2d tube establishes a contact between two electrodes that are located in the leg of the U-tube. Application of the apparatus on 20 healthy persons yielded satisfactory results.

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1/2   020   UNCLASSIFIED   PROCESSING DATE--09OCT70
TITLE--POTENTIAL ENERGY SPLITTING ON THE SUPERMULTIPLET QUANTUM NUMBERS,
  SU(3) INVARIANT INTERACTIONS, AND THE TOTAL ORBITAL MOMENTUM OF THE
AUTHOR-(02)-VANAGAS, V., KALINAUSKAS, R.

COUNTRY OF INFO--USSR

SOURCE--YAD. FIZ. 1970, 11(1), 63-75

DATE PUBLISHED--------70

SUBJECT AREAS--PHYSICS

TOPIC TAGS--NUCLEAR SPIN, PARITY PRINCIPLE, MULTIPLET SPLITTING, EXCITED
  NUCLEUS, POTENTIAL ENERGY, NUCLEAR MODEL, ORBIT MOMENTUM

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAME--1980/0169   STEP NO--UR/0367/70/011/001/0063/0075

CIRC ACCESSION NO--AP0048461
                        UNCLASSIFIED

CIRC ACCESSION NO--AP0048461
ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. AN APPROX. DEPENDENCE OF THE
  POTENTIAL ENERGY OF THE NUCLEUS ON THE QUANTUM NOS. OF THE TOTAL SPIN S,
  ISOSPIN T, AND ORBITAL MOMENTUM L IS GIVEN FOR THE SUPERMULTIPLET MODEL.
   GENERAL PROPERTIES ARE DISCUSSED OF THE SU(3) INVARIANT ENERGY, WITH
  EXCHANGES, CALCD. IN THE UNITARY SYMMETRY APPROXN., IN THE CASE OF
  GROUND AND OSCILLARY EXCITED STATES, OF P AND SD NUCLEI.   SOME EXAMPLES
  OF P NUCLEI ARE PRESENTED TO SHOW THE DEPENDENCE OF THE POSITION OF
  ANOMALOUS PARITY ENERGY LEVELS ON THE QUANTUM NOS. OF THE UNITARY SCHEME
  MODEL. CHARACTERISTICS EXAMPLES ARE PRESENTED OF THE EXPTL. OBSD.
  SPLITTING ON L FOR NORMAL AND ANOMALOUS PARITY LEVELS OF P AND SD
  NUCLEI. THE POSSIBLE INTERPRETATION OF THIS SPLITTING IS DUSCUSSED.
  THE RELATION BETWEEN THE POTENTIAL ENERGY AND GENERAL ORBITAL MOMENT OF
  THE L NUCLEUS IS INVESTIGATED, AS WELL AS SOME OF THE CHARACTERISTICS OF
  CERTAIN SU(3) INVARIANT SPECTRA. SPLITTING AT L IS SIMILAR TO THAT OF
  THE LEVELS OF THE NEG. PARITY OF THE P NUCLEI.   FACILITY: INST.
  FIZ. MAT., VILNIUS, USSR.

UNCLASSIFIED

USSR   UDC 539.19

VANAGAS, V. V., KALINAUSKAS, R. K.

"Genealogical Breakdown of Orbital Wave Functions of Orthogonal Schemes
and the Method of K-Harmonics and Factorization of Genealogical Coeffi-
cients"

Translation: Formulas are given for the factorization of orbital genealo-
gical coefficients of the wave function of a unitary scheme. The genealogical
breakdown of the orbital wave function of the orthogonal scheme and the
method of K-harmonics is given along with factored expressions for the
genealogical coefficients of these expansions. A transformation relating
the radial wave functions of multidimensional oscillators with Jacobi poly-
nomials is obtained. Authors abstract.

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USSR   UDC: 219.21

KALINAUSKAYTE, N.

"Some Expansions of the Densities of Multidimensional Stable Distributions With Exponents $\alpha > 1$"

Lit. mat. sb. (Lithuanian Mathematics Collection), 1970, 10, No 3, pp 491-495 (from RZh-Kibernetika, No 7, Jul 71, Abstract No 7V28)

Translation: Series expansions are found for the density of a stable distribution law with exponent $2 > \alpha > 1$ and asymptotic formulas are derived for the density of stable distribution for $\alpha \in [0, 2], \alpha \neq 1$ when $|x| \to 0$. Author's abstract.

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USSR

UDC 519.21

KALINAUSKAYTE, N.

"Some Expansions of Multivariate Symmetrical Stable Densities"

Lit. Mat. Sb., [Lithuanian Mathematics Collection], Vol 10, No 4, pp 727-732, (Translated from Referativnyy Zhurnal Kibernetika, No 5, 1971, Abstract No. 5V11 by the author).

Translation: Let $p_\alpha(x)$, $x \in R_s$ be the density of a multivariate stable distribution with characteristic function $\exp\{-\rho^\alpha\}$, where $\rho^2 = t_1^2 + \ldots + t_s^2$. For all $x \in R_s$, $x \neq 0$, expansions are produced: 1) if $0 < \alpha < 1$, then

$$p_\alpha(x) = \frac{1}{2\pi^{\frac{s}{2}+1} |x|^s} \sum_{k=1}^{\infty} \frac{(-1)^{k+1}}{k!} \times$$

$$\times \left(\frac{2}{|x|}\right)^{\alpha k} \Gamma\left(\frac{\alpha k + s}{2}\right) \Gamma\left(\frac{\alpha k + 2}{2}\right) \sin \frac{\alpha \pi}{2} k.$$

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USSR

KALINAUSKAYTE, N., Lit. Mat. Sb. Vol 10, No 4, pp. 727-732.

UDC 519.21

2) If $1 < \alpha \leq 2$, then

$$p_\alpha(x) = \frac{1}{\alpha \, (\sqrt{2\pi})^s} \sum_{k=0}^{\infty} \frac{(-1)^k \, |x|^{2k} \Gamma\left(\frac{2k+s}{\alpha}\right)}{\Gamma(k+1) \, \Gamma\left(k+\frac{s}{2}\right) 2^{2k}},$$

where $|x| = \sqrt{x_1^2 + \cdots + x_s^2}$. Also, asymptotic formulas are given for $P_\alpha(x)$, $\alpha \in (0,2)$ where $|x| \to \infty$.

2/2

USSR

UDC [537.226+537.311.33]:[537+535]

KALINAUSKENE, B. I., LAPINSKAS, I. I., POZHELA, YU. K., and SHIMULITE, YE. A.

"Investigation of Electrical Conductivity of Fine-Grained Semiconductor Systems in a Constant and Microwave Field"

Translation: The authors investigated the resistance of fine-grained Ge and Si systems as a function of constant and microwave field intensity. The resistance of such systems decreases with an increase in both the constant and microwave field applied to them.

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USSR

KALINAYUSKAYTE, N. B.

"Exponential Decrease in Certain Multidimensional Stable Densities"

Lit. mat. Sb.[Lithuanian Mathematics Collection], Vol 11, No 3, 1971, pp 557-562 (Translated from Referativnyy Zhurnal, Kibernetika, No 3, 1972, Abstract No 3 V16 by the author).

Translation: An asymptotic formula is produced for the nondegenerate s-dimensional stable density $g_\alpha(x)$ under the condition that

$$|x|^{\frac{1}{\alpha-1}} \to \infty, \quad \alpha \neq 1, \quad 0 < \alpha < 2,$$

and measure $\mu(\cdot)$, fixed on its unit sphere, is concentrated in the first octant of space R_s.

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USSR

BANIS, I. I., KALINAYUSKAYTE, N. B., BAYTKUS, P. S.

"The Rate of Convergence and Stable Distribution in a Local Theorem"

Lit. mat. sb. [Lithuanian Mathematics Collection], Vol 11, No 3, 1971, pp 511-516, (Translated from Referativnyy Zhurnal, Kibernetika, No 3, 1972, Abstract No 3 V24 by the author's).

Translation: Let $\{\xi_i\}$, $i = 1, 2, \ldots$, be a sequence of independent, identically distributed random quantities, belonging to the area of normal attraction of stable rule G_α, and such that the normalized sum with all $n > n_0$ has limited density. Under conditions such that random quantities $\{\xi_i\}$ have zero pseudo moments $\mu(k)$ of order $k = 0, 1, \ldots, r - 1$, where $r = [\alpha] + 1$, and absolute pseudo moment $\nu(r)$ is finite, a residual term is produced in the local theorem of order $O\left(n^{-\frac{r-\alpha}{\alpha}}\right)$ where $n \to \infty$. If we assume $\mu(k) = 0$, $k = 0, 1, \ldots, r$, and $\nu(1 + \alpha) < \infty$, the residual term will be of the order $O\left(n^{-\frac{1}{\alpha}}\right)$ where $n \to \infty$.

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USSR

UDC 629.7.036.3:536.46

GLUSHKOV, V. YE., KALINCHAK, V. V., and FEDOSEYEVA, N. V.

"Calculation of the Evaporation Rate of Drops at High Temperatures"

Odessa, 11-ya Vses. Konf. po Vopr. Ispareniya, Goreniya i Gaz. Dinamiki Dispersn. Sistem, 1972 -- Sbornik (11-th All-Union Conference on Problems of the Evapora-tion, Combustion, and Gas Dynamics of Dispersed Systems, 1972 -- Collection of Articles), 1972, pp 34-35 (from Referativnyy Zhurnal -- Aviyatsionnyye i Raketnyye Dvigateli, No 1, 1973, Abstract No 1.34.10. Resume)

Translation: When calculating the evaporation rate of drops, it is necessary to know the relationship of their temperature T_s to the conditions of evapora-tion (the temperature T_{med} and pressure P_{med}, etc.). The temperature of an evaporating drop is found from the solution of a system of heat- and mass-exchange equations. The solution of this system leads to a transcendental equation with respect to T_s. The conducted analysis showed that disregarding the Stefan flow in heat- and mass-exchange equations at high temperatures leads to the physically unjustifiable expression $T_s \longrightarrow T_{med}$ when $T_{med} \longrightarrow \infty$.

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USSR

GLUSHKOV, V. YE., et al., 11-th All-Union Conference on Problems of the
Evaporation, Combustion, and Gas Dynamics of Dispersed Systems, 1972 --
Collection of Articles, 1972, pp 34-35

Taking the Stefan flow into account leads to the physically valid solution
$T_s \longrightarrow T_{boil}$ (boiling point) when $T_{med} \longrightarrow \infty$. The obtained relationship
permits the evaporation rate of the drop to be calculated directly at various
temperatures. Taking into account the relationship of the boiling point of
the liquid to its composition and the temperature of the surrounding medium
provides the possibility of calculating the evaporation rate of drops of multi-
component liquid mixtures at high-temperatures nonisobaric conditions.

2/2

"Construction of nth-Order Normalized Functions"

Abstract: Let in the domain Ω the positive function $\omega = \omega(x, y)$ belong to the class c^{10}. If the conditions $\omega = 0$, $\partial\omega/\partial\nu = 1$, $\partial^k \omega/\partial\nu^k = 0$ (k = 2, ..., n) (differentiated with respect to the normal) are satisfied on the boundary of Γ, then ω is said to be nth-order normalized. Such functions are encountered in the construction theory of functions and also when solving boundary value problems. A simple method of constructing such functions is proposed.

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USSR   UDC 616-058.13-022.7(CL.PERFRINGENS)

KALINICHENKO, N. F., BIRYUKOVA, S. V., PODGORNAYA, L. G., and STAROBINETS,
Z. G., Kharkov Institute of Microbiology, Vaccines, and Sera imeni Mechnikov

"Delayed Hypersensitivity in Guinea Pigs Sensitized Against Cl. perfringens
and Other Microorganisms"

Abstract: Investigations were conducted on 300-350 g guinea pigs to deter-
mine whether Cl. perfringens would induce delayed hypersensitivity cross-
reacting with allergens from other genera of bacteria. The animals were
sensitized by subcutaneous injection of 1 ml of a formalin treated culture
of one of the following: Cl. perfringens type A 28, E. coli Moscow, S.
aureus 209, Ps. pyocyanea, and proteus No 132. Thirty days later the
animals were tested with the respective allergens prepared by the method
of Rumova (1970). Each animal responded with a specific delayed hypersensi-
tivity against the allergen derived from the bacterium with which it was
immunized. Reaction against Cl. perfringens allergen in animals not sensi-
tized with Cl. perfringens was not specific. Subsequently, animals sensi-
tized against Cl. perfringens were tested with allergens derived from the
1/2

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USSR

KALINICHENKO, N. F., et al., Zhurnal Mikrobiologii, Epidemiologii i
Immunobiologii, No 7, 1973, p 148

other bacteria. A typical cutaneous reaction indicating delayed hypersensi-
tivity was obtained with each heterologous allergen, and was most pronounced
with the E. coli allergen. After 60 days the reaction against the homologous
Cl. perfringens allergen was found to wane, the reaction with the E. coli and
staphylococcal allergens grew more intense, and that with the other allergens
remained unchanged.

2/2

USSR

UDC 621.376.029.4:.621.38

VOLKOV, YU. P., KALINCHUK, B. A., KOLTIK, YE. D., PICHUGIN, O. A., and PIASTRO, V. P.

"Optoelectronic Modulators for the Measurement of Small Signals of Infrasonic Frequencies"

Moscow, Izmeritel'naya Tekhnika, No 8, Aug 73, pp 52-54

Abstract: Optoelectronic modulators are described, and the specifications and performance of various types of optoelectronic modulators are presented. It is shown that in comparison to optoelectronic modulators constructed on the basis of gas-discharge tubes, optron-based optoelectronic modulators have a lower excitation power, simpler electrostatic screening, and possess higher reliability. 2 figures. 1 table. 4 references.

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USSR   UDC   621.373.826:53

KALINENKO, A. N., LUGIN, E. V., and TVOROGOV, S. D.

"Propagation of a Short Pulse of Optical Radiation"

Moscow, V sb. X Vses. konf. po rasprostr. radiovoln. Tezisy dokl.
(Tenth All-Union Conference on the Propagation of Radio Waves;
Report Theses--collection of works) "Nauka," 1972, pp 342-346
(from RZh--Radiotekhnika, No 10, 1972, Abstract No 10D356)

Translation: By using the results of an analysis of the interac-
tion of a light impulse and a spherical particle (in the linear
approximation) the attenuation coefficient is obtained in the
resonance Rayleigh dispersion for monochromatic (K^M) and pulse
(K^F) radiation. For the resonance dispersion, K^P and K^M differ
for any $\lambda = \omega_0 T$, where ω_0 is the pulse carrier frequency and T
is the pulse duration. For nonresonance dispersion, the differ-
ence arises with $\lambda \leq 1$. Bibliography of four. A. L.

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USSR

AKHIYEZER, I. A. and KALINICHENKO, A. I.

"Interaction of Ferromagnetics in the Metastable State With a Neutron Beam"

Abstract: This theoretical brief communication shows that at the boundary of the metastable region the increment in spin waves of a neutron beam passing through a ferromagnetic material tends to infinity. Hence, the increment in spin waves and the upsetting of the magnetic moment in the ferromagnetic material will result from beams of even low densities. It is because of this fact that the interaction of such beams and ferromagnetics in a metastable state is of especial interest. The theory of amplification of the waves is generalized for the case of ferromagnetics in this state. The authors also evaluate the minimum beam density causing the upsetting of the ferromagnetic material's magnetic moment. They express their gratitude to V. D. Volovik and V. T. Lazurik-El'tsufin for their useful comments.
1/1

USSR

UDC: 8.74

DEL', V. D., KALINICHENKO, G. D.

"Floating Decimal Programming for the Minsk-1 Digital Computer. Textbook"

Programmirovaniye s plavayushchey zapyatoy dlya tsifrovoy vychislitel'noy mashiny Minsk-1. Uchebn. posobiye (cf. English above), Tomsk Polytechnical Institute, Tomsk, 1971, 49 pp, 20 k., mimeo. (from RZh-Kibernetika, No 1, Jan 72, Abstract No 1V950 K)

[No abstract]

1/1

ELECTRONICS
Amplifiers

USSR

UDC: 621.375.13

KALINICHENKO, G. V.

"A Transistorized Pulse Amplifier With Complex Combined Feedback"

Tr. Altaysk. politekhn. in-ta (Works of the Altai Polytechnical Institute), 1970, vyp. 12, pp 137-143 (from RZh-Radiotekhnika, No 6, Jun 71, Abstract No 6D99)

Translation: The proposed circuit makes simultaneous use of frequency--dependent positive feedback which increases the high-frequency transfer constant, and negative feedback which provides sufficient stability reserve. Expressions are found for the gain and transient characteristics. The optimum amplifier mode is set by changing the capacitance in the feedback circuit, which can be done over a wide range. Bibliography of two titles. N. S.

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KALINICHENKO, L. G., BAKLANOVA, L. V., SULAKSHIN, S. S.

"Determination of Correlation Characteristics Using the Minsk-1 Computer"

NO ABSTRACT.

USSR

UDC 681.3.001:518.5

SOKOLOV, S.N., BELYAYEVSKAYA, L.V., KALINCHENKO, P.A., et al.

"Fortran and Monitor System"

Moscow, Statistika Press, 1970, 144 pp., ill., 65 kop. (from RZh-Avtomatika, Telemekhanika i Vychislitel'naya Tekhnika, No 2, Feb 71, Abstract No 2B70K)

Translation: This is a handbook of practical utilization of the programming automation system developed at the Institute of High Energy Physics for the Minsk-22 Computer using Fortran as the input language. The book comprises two parts and an appendix. The first part of the book contains a description of the input language constructed on the basis of the CDC Fortran language descriptions for the CDC-1604 and CDC-6600 and TsERN Fortran. The second part of the book is devoted to the monitor system and is actually a description of a language permitting programmers and operators to communicate quite convenient- ly with the computer via the monitor system. In the several years of develop- ment of this language, it has approached a degree of universality permitting its use almost without changes on other computers (M-220, BESM-4, Minsk-32, and so on).

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USSR

TRIBUNSKIY, V. V., KALINICHENKO, I. I., and KHADYYEV, M. S.

"Study of Composition and Structure of Scale from Nickel (NP2 and NKO.2), Alumel and Chromel Wire Rod"

Abstract: Electronographic and chemical studies indicated that the scale from NP2 and NKO.2 alloy wire rod consists of NiO, $NiFe_2O_4$, and traces of nickel. The scale on alumel wire consists of NiO, $NiAl_2O_4$, $NiMn_2O_4$, Fe_3O_4, and traces of nickel, the scale from chromel wire - of NiO, $NiCr_2O_4$, Cr_2O_3, and $(Fe, Cr)_2O_3$. It is established that the upper layer of the scale on the wire rod of the alloys studied consists of NiO. The $NiCr_2O_4$, Cr_2O_3, $(Fe, Cr)_2O_3$ phases, as well as $NiAl_2O_4$ and $NiMn_2O_4$ are present as individual crystals, dispersed in the NiO. The $NiFe_2O_4$ and Fe_3O_4 spinels are present in the scale in the form of individual interlayers.

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UNCLASSIFIED   PROCESSING DATE--11DEC70

TITLE--REDOX POTENTIALS OF NITRIC ACID, NICKEL NITRATE, AND THEIR MIXTURES
AS FUNCTIONS OF CONCENTRATION AND TEMPERATURE -U-

AUTHOR-(02)-KALINICHENKO, I.I., DOROFEYEVA, N.M.

COUNTRY OF INFO--USSR

SOURCE--ZH. PRIKL. KHIM. (LENINGRAD) 1970, 43(4), 771-6

DATE PUBLISHED--------70

SUBJECT AREAS--CHEMISTRY

TOPIC TAGS--PLATINUM ELECTRODE, ELECTRODE POTENTIAL, NITRIC ACID,
IONIZATION CONSTANT, THERMAL EFFECT, AQUEOUS SOLUTION, SODIUM NITRATE,
NICKEL COMPOUND

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAME--3004/0961   STEP NO--UR/0080/70/043/004/0771/0776

CIRC ACCESSION NO--AP0131546

UNCLASSIFIED

2/2   021   UNCLASSIFIED   PROCESSING DATE--11DEC70
CIRC ACCESSION NO--AP0131546
ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE REDOX POTENTIAL OF NO $SUB3$
PRIME NEGATIVE NEGATIVE N (GAS) WAS MEASURED AT 30, 50, 70, AND
90DEGREES AT A 4 CM PRIME2 PT ELECTRODE (VS SCE) IN SOLNS. CONTG.
VARIOUS CONCNS. OF NHO $SUB3$ OR NI(NO $SUB3$) $SUB2$ AND IN MIXTS. AT 22, 90,
AND 100DEGREES. INCREASING CONCNS. OF EITHER THE ACID OR THE SALT (TO
SIMILAR TO 6N) INCREASED THE POTENTIAL; INCREASING TEMP. INCREASED THE
POTENTIAL IN ACID SOLN. BUT LOWERED THE POTENTIAL IN THE SALT SOLN. IN
ACID SOLN., AT SIMILAR TO 10N CONCN., THE POTENTIAL BEGAN TO DECREASE
DUE TO A CHANGE IN IONIZATION PRODUCTS AS THE WATER CONTENT DECREASED
FROM NO $SUB3$ PRIME NEGATIVE PLUS H $SUB3$ O PRIME POSITIVE FOR AQ. SYSTEMS
TO H $SUB3$ O PRIME POSITIVE PLUS 2NH $SUB3$ PRIME NEGATIVE PLUS NO $SUB2$
PRIME POSITIVE IN NONAQ. MEDIA. IN MIXED SYSTEMS NI(NO $SUB3$) $SUB2$ MINUS
HNO $SUB3$ MINUS H $SUB2$ O, THE POTENTIAL DEPENDED ONLY ON THE TOTAL NO
$SUB3$ PRIME NEGATIVE CONCN.; HOWEVER, IN THE NANO $SUB3$ MINUS HNO $SUB3$
MINUS H $SUB2$ O SYSTEM, THE POTENTIAL DID DEPEND ON THE ACID CONCN.
CONSEQUENTLY, THE CONCN. DEPENDENCE OF THE REDOX POTENTIAL OF NO $SUB3$
PRIME NEGATIVE SYSTEM DEPENDS UPON ITS ABILITY TO COMPLEX WITH SOME
CATION SUCH AS NI PRIME2 POSITIVE.

UNCLASSIFIED

1/2   020   UNCLASSIFIED   PROCESSING DATE--11DEC70
TITLE--KINETICS OF THE OXIDATION OF LUMINOL BY FERRICYANIDE AND ITS
  CONNECTION WITH THE INTENSITY OF CHEMILUMINESCENCE -U-
AUTHOR--KALINICHENKO, I.YE.

CCUNTRY OF INFO--USSR

SOURCE--UKR. KHIM. ZH. 1970, 36(4), 379-84

DATE PUBLISHED--------70

SUBJECT AREAS--CHEMISTRY, PHYSICS

TOPIC TAGS--IONIC BONDING, FERRICYANIDE, CHEMILUMINESCENCE, OXIDATION,
  REACTION KINETICS

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED
PROXY FICHE NC-----FD70/605013/BC7 STEP NO--UR/0073/70/036/004/0379/0384

CIRC ACCESSICN NC--AP0140352
                              UNCLASSIFIED

CIRC ACCESSION NO--AP0140352
ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. AT 19.5DEGREES, IONIC STRENGTH
0.1, THE RATE OF OXIDN. OF LUMINOL (I) BY FE(CN)SUB6 PRIME3 NEGATIVE IS
IN ACCORD WITH MINUS D(I) OVER DT EQUALS K (I) (FE(CN)SUB6 PRIME3
NEGATIVE) (OH PRIME NEGATIVE) BASED ON THE SPECTROPHOTOMETRIC DETNS. OF
FE(CN)SUB6 PRIME3 NEGATIVE CONCN. AND THE EMPIRICAL FACTOR RELATING
CONSUMPTION OF FE(CN)SUB6 PRIME3 NEGATIVE AND I. K EQUALS 270 PLUS OR
MINUS 40 MOLE NEGATIVE PRIME2 SEC NEGATIVE PRIME1. IF H SUB2 O SUB2 IS
PRESENT, THE LUMINESCENCE IS GREATER (THAN IN THE ABSENCE OF H SUB2 O
SUB2) AND PROPORTIONAL TO THE CONCN. OF H SUB2 O SUB2 UP TO A MAX. THE
KINETICS OF THE LUMINESCENCE ARE NOT IDENTICAL TO THOSE OF THE OXIDN. H
SUB2 O SUB2 REACTS WITH SOME PRODUCT OF THE INITIAL OXIDN. TO FORM THE
LUMINESCENT SPECIES.   FACILITY: INST. OBSHCH. NEORG. KHIM., KIEV,
USSR.

1/2   009   UNCLASSIFIED   PROCESSING DATE--20NOV70

TITLE--MANGANESE II CITRATE COMPLEXES -U-

AUTHOR--KALINICHENKO, I.YE.

COUNTRY OF INFO--USSR

SOURCE--UKR. KHIM. ZH. 1970, 36(1), 92-4 (RUSS)

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SUBJECT AREAS--CHEMISTRY

TOPIC TAGS--ORGANIC AZO COMPOUND, ORGANIC COMPLEX COMPOUND,
ORGANOMANGANESE COMPOUND, METAL COMPLEX COMPOUND, POTENTIOMETRIC
TITRATION

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAME--2000/2204   STEP NO--UR/0073/70/036/001/0092/0094

CIRC ACCESSION NO--AP0125784
                    UNCLASSIFIED

CIRC ACCESSION NO--AP0125784
ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE FOLLOWING EQUIL. CONSTS. WERE
DETD. BY POTENTICMETRIC TITRN. (EQUIL. AND PK GIVEN (SHOWN ON
MICROFICHE). THE LAST CONST. WAS ALSO CALCD. AS 5.05 PLUS OR MINUS 0.1
FROM THE RESULTS OF METAL INDICATOR DETNS. BY USING THE MN,4,
(2,PYRIDYLAZO)RESORCINOL COMPLEX AND N(CH SUB2 CO SUB2 H) SUB3.
FACILITY: INST. OBSHCH. NEORG. KHIM. KIEV, USSR.

UNCLASSIFIED

Acc. Nr.: _AM0104084_   /   Ref. Code: _4R0000_

Glushkov, V. M.; Barabanov, A. A.; Kalinichenko, L. A.; Mikhnovskiy, S. D.; Rabinovich, Z. L.

Computers With Developed Interpretation Systems (Vychislitel'nyye mashiny s razvitymi sistemami interpretatsii) Kiev, 1970, 258 pp (SL:2012)

TABLE OF CONTENTS:

REEL/FRAME

19870477

Microbiology

UDC 576.851.55.097

USSR

CHERKAS, H. P., KALINICHENKO, M. F., BIRYUKOVA, S. V., and PIDHORNA, L. H.,
Kharkov Scientific Research Institute of Vaccines and Sera   imeni I. I.
Mechnikov

"Toxins and Toxoids of Clostridium perfringens"

Abstract: Several series of pancreatic, pepsin and acidic hydrolysates were
prepared in an attempt to find a reproducible inexpensive culture medium for
production of Clostridium perfringens toxin. It was determined experimentally
that the best medium consisted of one part pancreatic hydrolysate, two parts
acid hydrolysate diluted with distilled water to give 160-180% amine nitrogen
and 1.5-2% peptone; pH of the medium — 7.6-7.8. To simulate growth, 4%
brewers yeast was added (amine nitrogen 400-500 mg-%). In such a medium
after 5 hrs of incubation of Cl. perfringens at 37°C the pH dropped to 5.4-5.6
yielding material with toxin activity 400-600 MLD/ml. To obtain Cl. perfrin-
gens toxoid the culture liquid was filtered, formalin (0.3 and 0.2%) was
added twice with an interval of 16-18 hrs. The deactivation of the culture
medium lasted 7-14 days, the pH being kept at 7.2-7.4; it was then filtered,
purified, and concentrated by the polyphosphate method in presence of sul-

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USSR

CHERKAS, H. P., et al., Mikrobiilogicheskiy Zhurnal, Vol 33, No 2, Mar/Apr 71, pp 173-175

furic acid and 0.35% of hexametaphosphate. The toxoid yield was 60-70% with specific activity of 200-350 EC/mg. The toxoids exhibited high immunogenic activity in experiments with white mice.

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USSR

UDC 615.272:576.851.555].015.4:612.017.1

KALINICHENKO, N. F., PODGORNAYA, L. G., and BIRYUKOVA, S. V., Kharkov Institute
of Microbiology, Vaccines, and Sera imeni Mechnikov

"Hypersensitivity of the Delayed Type to Injection of Cl. perfringens Toxoid"

Abstract: Guinea pigs sensitized with a single subcutaneous injection of 50 BU
of purified, concentrated Cl. perfringens toxoid series 10 received intracutan-
eously 0.1 ml of the same preparation 21 days later. Within 48 hours many of
the animals developed hyperemia and necroses at the injection sites. These
allergic reactions were intensified when Freud's adjuvant or aluminum hydroxide
was combined with the toxoid. Sensitivity tended to decrease with increase in
the toxoid titers of the animals' sera. Repeated injection of the toxoids,
with or without adjuvant, raised the serum toxoid levels but had no effect on
the intensity of skin reactions.

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